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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,628	10/15/2003	Jiang Liu	1372.55.PRC	2627

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EXAMINER
JACOB, MARY C

ART UNIT	PAPER NUMBER
2123	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/605,628	LIU ET AL.	
	Examiner	Art Unit	
	Mary C. Jacob	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,13-15,17-26 and 32-37* is/are rejected.

7)☒ Claim(s) *8-12,16 and 27-31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The response filed 1/8/07 has been received and considered. Claims 1-37 have been presented for examination.

Information Disclosure Statement

2. The examiner respectfully requests that Applicant provide a date for the reference to Terrovitis. The reference has been considered, but a date for the reference could not be found by the Office.

Drawings

3. The objections to the drawings recited in the office action dated 10/6/06 have been withdrawn in response to the amendments to the drawings and specification filed 1/8/07.

Specification

4. The disclosure is objected to because of the following informalities. Appropriate correction is required.

5. The objections to the specification recited in the office action dated 10/6/06, not repeated below, have been withdrawn in response to the amendments to the specification filed 1/8/07.

6. Paragraph 0064 recites, "Now that the invention has been described". This appears to be an incomplete sentence or paragraph. It is respectfully requested that Applicant explain how this is a complete sentence or paragraph, or further, checks that the specification on file with the office is the correct version of the specification.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 14-18, 19, 33-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The rejections of claims under 35 U.S.C. 112, second paragraph, recited in the office action dated 10/6/06, not repeated below, have been withdrawn in response to the amendments to the claims and applicants arguments regarding claim 4, filed 1/8/07.

10. Claim 14 recites, "the stored output files associated with the simulated stimulus condition" in lines 3-4. It is unclear whether the "stored data files" are intended to be the same files as the "output files identified by the stimulus condition" in claim 1, line 11, or separate output files specifically associated with the "simulated stimulus condition".

11. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the actual simulation of the frequency translation device. The claim is directed to "simulating the response of the

frequency translation device" and further recites the steps of "using the simulated stimulus condition...to identify the stored output files associated with the simulated stimulus condition", "extracting the intermodulation products from the stored data output files that are associated with the simulated stimulus condition" and "simulating the response of the frequency translation device by displaying the extracted intermodulation products". It is unclear how "displaying the extracted intermodulation products" "simulates" the response of a frequency translation device.

12. Claim 19 recites "the stored data output files that are associated with the simulated stimulus condition" in lines 16-17. It is unclear whether or not the "stored data output files" are intended to be the same files as the "output files associated with the stimulus condition" in lines 13-14, or separate output files specifically associated with the "simulated stimulus condition".

13. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the actual simulation of the frequency translation device. The claim is directed to "characterizing and simulating a frequency translation device" and further recites the steps of "establishing a simulated stimulus condition", "using the simulated stimulus condition...to identify the stored output files associated with the simulated stimulus condition", "extracting the intermodulation products the stored data output files that are associated with the simulated stimulus condition" and "simulating the response of the frequency translation device by displaying the extracted intermodulation products". It is unclear how

"displaying the extracted intermodulation products" "simulates" the response of a frequency translation device.

14. Claim 33 recites "the stored data output files that are associated with the simulated stimulus condition" in lines 5-6. It is unclear whether or not the "stored data output files" are intended to be the same files as the "output files associated with the stimulus condition" in Claim 20, lines 10-11, or separate output files specifically associated with the "simulated stimulus condition".

15. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the actual simulation of the frequency translation device. The claim is directed to "simulating the response of the frequency translation device" and further recites the steps of selecting a stimulus condition, identifying and extracting the intermodulation products from the stored data output files associated with the simulated stimulus condition and displaying the simulated frequency response of the frequency translation device by displaying the extracted intermodulation products. It is unclear how "displaying the simulated frequency response of the frequency translation device by displaying the extracted intermodulation products" simulates the frequency translation device.

16. Claim 37 recites, "the stored data output files associated with the simulated stimulus condition" in lines 16-17. It is unclear whether or not the "stored data output files" are intended to be the same files as the stored "output files" lines 12-13, or separate output files specifically associated with the "simulated stimulus condition".

17. Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the actual simulation of the frequency translation device. The claim is directed to "characterizing and simulating a frequency translation device" and further recites the steps of selecting a stimulus condition, identifying and extracting the intermodulation products from the stored data output files associated with the supplied stimulus condition and displaying a simulated response of the frequency translation device by displaying the extracted intermodulation products. It is unclear how "displaying the simulated frequency response of the frequency translation device by displaying the extracted intermodulation products" simulates the frequency translation device.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 1-6, 13-15, 17, 19-25, 32-35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lassesen ("Simulation and Measurement of Wireless Transmitter and Receiver Hardware", Master's Project Report, University of South Florida, sections 2.1.3, 2.1.4, 2.1.7, 3.6, 3.7, 4.1.6, 4.3, A.6, Appendix E, August 2000) in view of Benabe et al ("Simulation of a 915 MHz receiver Using the HP Advanced Design System", ARFTG Conference Digest, Computer-Aided Design and Test for High-Speed Electronics, pages 28-38, 1998).

20. As to Claims 1 and 20, Lassesen teaches: a method and system for characterizing a frequency translation device, the method comprising: a stimulus supply for supplying a stimulus condition as input to the frequency translation device to generate an output spectrum (section 3.6, paragraph 1, last sentence; Figure 3-12, "VNA" and "SRC"); an output measurement device for measuring a plurality of intermodulation products in the output spectrum of the frequency translation device resulting from the stimulus condition input, the plurality of intermodulation products further comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products (section 2.1.3, paragraph 1, sentence 4; section 2.1.7, paragraph 1, sentences 6-8, section 2.1.7, paragraph 2 and Tables 2-1, 2-21; section 3.6, paragraph 1, sentences 1-2; Figure 3-12, "SA"); establishing a predetermined file format (Table 2-1); storing the plurality of sum intermodulation

products and the plurality of difference intermodulation products in a plurality of output files according to the prederermined file format (Table 2-1, figure 2-21 and descriptions; 2.1.7, paragraph 2; section 3.6, sentences 1-3; E.6, paragraphs 1-2, 6, Table E.1).

21. Lassesen does not expressly teach: establishing an index file to identify the stored output files, wherein the index file comprises at least one variable associated with the stimulus condition that identifies the stored output files associated with the stimulus condition.

22. Benabe et al teaches the use of Advanced Design System software (ADS) to simulate a 915 MHz receiver which provides the capability to obtain a more accurate prediction of intermodulation distortion or adjacent channel power that would be obtained through the use of actual filter characteristics, including the effects of non-ideal skirts and any parasitic pass-bands which may exist (Introduction, paragraphs 1 and 2). Benabe et al teaches that it is important to accurately describe the non-linearities in the frequency-translation stages, accomplished by including the intermodulation table for the mixer, wherein the appropriate sideband is selected and the intermodulation file is indexed and identified by the stimulus condition (Introduction, paragraph 3; section D, paragraph 1 and Figure 9, wherein "VAR, VAR2, RF_pow+0, RFfreq and LOfreq specify the input stimulus and therefore, identify the index file by stimulus condition).

23. Lassesen and Benabe et al are analogous art since they are both directed to the inclusion of intermodulation products in the simulation of a frequency translation device.

24. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the storage of the intermodulation products as taught by

Lassesen to further include the establishment of an index file to identify the output files storing the intermodulation products, wherein the index file comprises at least one variable associated with the stimulus condition that identifies the stored output files associated with the stimulus condition as taught in Benabe et al since Benabe et al teaches the use of Advanced Design System software (ADS) to simulate a 915 MHz receiver which provides the capability to obtain a more accurate prediction of intermodulation distortion or adjacent channel power that would be obtained through the use of actual filter characteristics, including the effects of non-ideal skirts and any parasitic pass-bands which may exist (Introduction, paragraphs 1 and 2) and further teaches that it is important to accurately describe the non-linearities in the frequency-translation stages, accomplished by including the intermodulation table for the mixer (section D, paragraph1).

25. As to Claims 2 and 21, Lassesen as modified by Benabe et al teach: wherein the frequency translation device is a mixer (Lassesen: section 3.6, sentences 1-3; Figure 3-12).

26. As to Claims 3 and 22, Lassesen as modified by Benabe et al teach: wherein supplying the stimulus condition further comprises supplying a sweeping stimulus condition (Lassesen: Appendix E, paragraphs 1 and 6; Table E1, "Source"; Benabe et al: Introduction, paragraph 2, sentence 4; Section B, paragraph 1, sentences 1 and 2, Figure 3; Section C, paragraph 1, sentences 1-2, Figures 7 and 8).

27. As to Claim 4, Lassesen as modified by Benabe et al teach: wherein supplying the sweeping stimulus condition further comprises supplying an input signal at a

predetermined power and frequency (Benabe et al: page 30, lines 1-3) and establishing a local oscillator input at a predetermined power and frequency (Benabe et al: page 29, paragraph 1, lines 3-5, Table 1, "Port2"), and stepping the input signal and local oscillator power through a predetermined range of values (Benabe et al: Figure 3 and description, Section B, paragraph 1; Figures 7 and 8 and descriptions, Section C, paragraph 1).

28. As to Claim 5, Lassesen as modified by Benabe et al teach: wherein supplying the sweeping stimulus condition further comprises supplying an input signal at a first frequency (Benabe et al: page 29, paragraph 1, lines 2-3; page 30, line 1) and a local oscillator input at al second frequency (Benabe et al: page 29, paragraph 1, lines 3-5), stepping the input signal power level through a predetermined first range of values and stepping the local oscillator power level through a predetermined second range of values (Benabe et al: Section C, paragraphs 1 and 2, Figures 7 and 8).

29. As to Claims 6 and 25, Lassesen as modified by Benabe et al teach: wherein measuring the plurality of intermodulation products further comprises measuring the amplitude of the intermodulation products (Lassesen: E.6, paragraph 1, sentence 1).

30. As to Claims 13 and 32 Lassesen as modified by Benabe et al teach: simulating the response of the frequency translation device to a simulated stimulus condition (Lassesen: Appendix E, paragraphs 1 and 6; Table E1, "Source"; E.6, paragraph 2; Figure 3-12, "VNA" and "SRC").

31. As to Claims 14 and 33, Lassesen as modified by Benabe et al teach: wherein simulating the response of the frequency translation device to a simulated stimulus

condition further comprises: establishing a simulated stimulus condition, a simulated stimulus condition selector (Lassesen: Appendix E, paragraphs 1 and 6; Table E1, "Source"; E.6, paragraph 2; Figure 3-12, "VNA" and "SRC"); using the simulated stimulus condition as the at least one variable of the index file to identify the stored output files associated with the simulated stimulus condition and extracting the intermodulation products from the stored data files that are associated with the simulated stimulus condition (Benabe et al: Introduction, paragraph 3; section D, paragraph 1 and Figure 9, wherein "VAR, VAR2, RF_pow+0, RFfreq and LOfreq specify the input stimulus and therefore, identify the index file by stimulus condition); and simulating the response of the frequency translation device by displaying the extracted intermodulation products (Benabe et al: Figure 10).

32. As to Claims 15 and 34, Lassesen as modified by Benabe et al teach: wherein the simulated stimulus condition further comprises a simulated sweeping stimulus condition (Lassesen: Appendix E, paragraphs 1 and 6; Table E1, "Source"; Benabe et al: Introduction, paragraph 2, sentence 4; Section B, paragraph 1, sentences 1 and 2, Figure 3; Section C, paragraph 1, sentences 1-2, Figures 7 and 8).

33. As to Claims 17 and 35, Lassesen as modified by Benabe et al teach: wherein displaying the extracted intermodulation products further comprises displaying the extracted intermodulation products in a graphical format (Benabe et al: Figure 10).

34. As to Claim 23, Lassesen as modified by Benabe et al teach: wherein the stimulus supply further comprises a plurality of signal generators (Lassesen: Figure 3-12, "VNA" and "SRC").

35. As to Claim 24, Lassesen as modified by Benabe et al teach: wherein the output measurement device is a spectrum analyzer (Lassesen: Figure 3-12, "SA").

36. As to Claims 19 and 37, Lassesen teaches: a method and system for characterizing a frequency translation device, the method comprising: a stimulus supply for supplying a stimulus condition as input to the frequency translation device to generate an output spectrum (section 3.6, paragraph 1, last sentence; Figure 3-12, "VNA" and "SRC"); an output measurement device for measuring a plurality of intermodulation products in the output spectrum of the frequency translation device resulting from the stimulus condition input, the plurality of intermodulation products further comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products (section 2.1.3, paragraph 1, sentence 4; section 2.1.7, paragraph 1, sentences 6-8, section 2.1.7, paragraph 2 and Tables 2-1, 2-21; section 3.6, paragraph 1, sentences 1-2; Figure 3-12, "SA"); establishing a predetermined file format (Table 2-1); storing the plurality of sum intermodulation products and the plurality of difference intermodulation products in a plurality of output files according to the predetermined file format (Table 2-1, figure 2-21 and descriptions; 2.1.7, paragraph 2; section 3.6, sentences 1-3; E.6, paragraphs 1-2, 6, Table E.1); establishing a simulated stimulus condition, a simulated stimulus condition selector. (Appendix E, paragraphs 1 and 6; Table E1, "Source"; E.6, paragraph 2; Figure 3-12, "VNA" and "SRC").

37. Lassesen does not expressly teach: establishing an index file to identify the stored output files, wherein the index file comprises at least one variable associated with the stimulus condition that identifies the stored output files associated with the stimulus condition; using the simulated stimulus condition as the at least one variable of the index file to identify he stored output files associated with the simulated stimulus condition, extracting the intermodulation products of interest from the stored data output files that are associated with the simulated stimulus condition and simulating the response of the frequency translation device by displaying the extracted intermodulation products.

38. Benabe et al teaches the use of Advanced Design System software (ADS) to simulate a 915 MHz receiver which provides the capability to obtain a more accurate prediction of intermodulation distortion or adjacent channel power that would be obtained through the use of actual filter characteristics, including the effects of non-ideal skirts and any parasitic pass-bands which may exist (Introduction, paragraphs 1 and 2). Benabe et al teaches that it is important to accurately describe the non-linearities in the frequency-translation stages, accomplished by including the intermodulation table for the mixer, wherein the appropriate sideband is selected and the intermodulation file is indexed and identified by the stimulus condition (Introduction, paragraph 3; section D, paragraph 1 and Figure 9, wherein "VAR, VAR2, RF_pow+0, RFfreq and LOfreq specify the input stimulus and therefore, identify the index file by stimulus condition); using the simulated stimulus condition as the at least one variable of the index file to identify he stored output files associated with the simulated stimulus condition and extracting the

intermodulation product of interest from the stored data files associated with the simulated stimulus condition (Introduction, paragraph 3; section D, paragraph 1 and Figure 9, wherein "VAR, VAR2, RF_pow+0, RFfreq and LOfreq specify the input stimulus and therefore, identify the index file by stimulus condition); and simulating the response of the frequency translation device by displaying the intermodulation products (Figure 10).

39. Lassesen and Benabe et al are analogous art since they are both directed to the inclusion of intermodulation products in the simulation of a frequency translation device.

40. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the storage of the intermodulation products as taught by Lassesen to further include the establishing an index file to identify the stored output files, wherein the index file comprises at least one variable associated with the stimulus condition that identifies the stored output files associated with the stimulus condition; using the simulated stimulus condition as the at least one variable of the index file to identify he stored output files associated with the simulated stimulus condition, extracting the intermodulation products of interest from the stored data output files that are associated with the simulated stimulus condition and simulating the response of the frequency translation device by displaying the extracted intermodulation products as taught in Benabe et al since Benabe et al teaches the use of Advanced Design System software (ADS) to simulate a 915 MHz receiver which provides the capability to obtain a more accurate prediction of intermodulation distortion or adjacent channel power that would be obtained through the use of actual filter characteristics, including the effects of

non-ideal skirts and any parasitic pass-bands which may exist (Introduction, paragraphs 1 and 2) and further teaches that it is important to accurately describe the non-linearities in the frequency-translation stages, accomplished by including the intermodulation table for the mixer (section D, paragraph1).

41. Claims 7 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lassesen as modified by Benabe et al as applied to claims 1 and 20 above, and further in view of Pike et al (US Patent 5,089,782).

42. Lassesen as modified by Benabe et al teach measuring a plurality of intermodulation products in the output spectrum of a frequency translation device resulting from a stimulus condition input and using a Vector Network Analyzer as a component in the test setup for the measurements.

43. Lassesen as modified by Benabe et al do not expressly teach measuring the amplitude and phase of the intermodulation products.

44. Pike et al teaches a method and apparatus for swept frequency measurements of harmonics produced by non-linear RF devices using a vector network analyzer that dramatically speeds the linear and non-linear amplifier and mixer measurements on a device under test (column 1, lines 60-68) wherein the amplitude and phase of intermodulation products are measured and displayed (column 4, lines 55-66; column 25, lines 58-66).

45. Lassesen as modified by Benabe et al and Pike et al are analogous art since they are all directed to the measurements of non-linear characteristics of a frequency translation device.

46. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the measurements of intermodulation products in the output spectrum of a frequency translation device as taught by Lassesen as modified by Benabe et al to include measuring the amplitude and phase of the intermodulation products as taught by Pike et al since Pike et al teaches a method and apparatus for swept frequency measurements of harmonics produced by non-linear RF devices using a vector network analyzer that dramatically speeds the linear and non-linear amplifier and mixer measurements on a device under test (column 1, lines 60-68).

47. Claims 18 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lassesen as modified by Benabe et al as applied to claims 14 and 36 above, and further in view of Pratap ("Getting Started with MATLAB, A Quick Introduction for Scientists and Engineers", Saunders College Publishing, pages 3-5, 1996).

48. Lassesen as modified by Benabe et al teach wherein displaying a result of the simulation, the extracted intermodulation procucts, further comprises displaying a graphical result (Benabe et al: Figure 10) and teach that further analysis of simulation data includes plotting the results in MathCad or an alternate software tool that can facilitate plotting (Lassesen: A.6).

49. Lassesen as modified by Benabe et al do not expressly teach wherein the graphical format is three-dimensional.

50. Pratap teaches MATLAB is a software package of high-performance numerical computation and visualization that provides an interactive environment, providing tools for data analysis, signal processing and other types of scientific computations, and includes functions for 3-D graphics and animation (page 3) that is close in aim and scope to MathCad, but further includes a programming environment which MathCad lacks (section 1.2, lines 12-13).

51. Lassesen as modified by Benabe et al and Pratap are analogous art since they are all directed to the plotting of simulation results for visual analysis.

52. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plotting of results in MathCad or an alternate software tool as taught in Lassesen as modified by Benabe et al to further include the use of a software tool such as MATLAB that enables the 3-D plotting of simulation results since Pratap teaches MATLAB is a software package of high-performance numerical computation and visualization that provides an interactive environment, providing tools for data analysis, signal processing and other types of scientific computations that is close in aim and scope to MathCad, but further includes a programming environment which MathCad lacks (section 1.2, lines 12-13).

Allowable Subject Matter

53. Claims 8-12, 16, 27-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

54. Applicant's arguments filed 1/8/07 have been fully considered but they are not persuasive.

55. Applicant argues, "Lassen describes an intermodulation file used for mixer simulation that stores only the sum or difference intermodulation products under the assumption that the mixer is symmetrical i.e., the corresponding sum and difference intermodulation products have the same amplitude" and discusses in Table 2-1 and section 2.1.7, paragraph 1, the entries in the table represent the relative amplitude of the mixing products, that is either the sum intermodulation products or the difference intermodulation products. And for these reasons, "Applicant does not believe that Lassen describes a plurality of intermodulation products comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products as claimed by the present invention".

56. The paragraph recited by Applicant that describes Table 2-1 (section 2.1.7, paragraph 1), describes the Intermodulation Table as describing the power levels for *each frequency component* generated at the mixer. As recited in section 2.1.3, paragraph 1, these frequency components are third order intermodulation components

consisting of sum and difference intermodulation products as shown in Figure 2-7. Therefore, it is understood that the Intermodulation Table of Table 2-1 describing the power levels for *each frequency component* represents the power levels for each intermodulation component, thereby, storing the plurality of the sum and the plurality of difference intermodulation products such as those discussed in section 2.1.3, paragraph 1 and Figure 2-7. Further, section 3.6, sentences 1-3 describe the mixing products generated at a mixer being measured and recorded, these measured components later inserted into a custom Intermodulation file. It is understood from this description that these products being measured and recorded (stored) are the sum intermodulation products and the difference intermodulation products.

Conclusion

57. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

58. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary C. Jacob whose telephone number is 571-272-6249. The examiner can normally be reached on M-F 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Mary C. Jacob
Examiner
AU2123

MCJ
3/21/07

3/22/07
PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100